Following is a list of items that the RTMA "Good-Enough" Sub-group would like addressed with the RTMA and its assimilation process. Until these items are addressed, it is difficult to determine what is a "good-enough" analysis.

Projected implementation dates.
       V2.5: March 28, 2017 (code frozen Dec. 20, 2016)
       V2.6: Sept. 2017 (code to be frozen ~Mar. 31 2017)
       V2.7: Mar. 2018 (code to be frozen ~Nov. 1 2017)
       V2.8: Sept. 2018 (code to be frozen ~Mar., 2018)

Legend:
       COMPLETED
       SCHEDULED
       SCIENCE ISSUE: DEVELOPMENT UNDERWAY/PLANNED, SOLUTION DATE TBD
       SIGNIFICANT CHANGE REQUIRED EXTERNAL TO RTMA GROUP

1. **Develop a more agile and responsive mechanism for updating observation station (METARs and mesonet) information, and improve the accuracy of station location information.**
    a. Updates to METARS station locations have gone in (**Nov. 17. 2017**). Ongoing updates will be done as needed (**~quarterly**).
    b. Mesonets locations currently come from MADIS
    c. Updates to Synop station locations to be implemented **in next 2 weeks, ~ by April 7th, 2017**.
    d. With TAC to BUFR, location will be carried with observation report
      i. synops and ships and buoys (**expected 7/2017)**
      ii. raobs (expected **12/2017)**
      iii. not applicable to mesonets or METARs
    e. Changes to precision of location require extensive changes to observation processing system (some change in precision with TAC to BUFR change)
    f. Develop of agile method to fix station metadata problems requires agreement with NCO to bypass formal implementation process.
2. **Much expanded quality control of observations and mesonets.**
    a. Updated variational QC was implemented in RTMA (**v2.4**). Further enhancement fairly well along in development (subject to performance, **expected v2.8**).
    b. Simplified updating of reject lists through Obs Processing change: expanded to include mesonets in addition to surface marine and METAR (**Feb. 21, 2017**).
      i. Meeting to discuss governance with stakeholders scheduled for (**April 4th, 2017**).
    c. Complex terrain QC relaxation (**v2.3**)
    d. Buddy check for temperature (**v2.3,** AK region **v2.4**). Buddy check is a QC procedure.
      i. Expansion to other variables not ready in time for v2.6. Development and evaluation are ongoing (**v2.7**). Needs would be most effectively be addressed with improved background.
    e. Relaxation of gross error check tolerances to allow use of more observations (**v2.6**).
    f. Improved background should improve QC decisions.*

3. **Much expanded ability for different weighting for different observations in varied situations.**
a. Increase background error when terrain variance is large to provide closer fit to observations (**v.2.6/v2.7**).
b. Inclusion of mesonet provider dependent errors (**v2.7**)
c. Station dependent observation errors (based on station history, sub-grid topograpy, etc.) is a good idea. Needs a rewrite of Obs Processing at NCEP.
d. Increasing weight given observation is not correct solution, but rather Increasing error in background error covariance when model makes forecast errors. Requires a hybrid-ensemble system to capture this situational-dependence. Could leverage a frequently updated HREF-like system.
e. Improved background would greatly diminish this issue.*
4. **Improve background co-variance "analysis uncertainty" grids so they are more representative of the current errors in the background, etc**.
a. Providing temperature O-A's at observation locations (**not-operational product, Fall 2016**).
i. Expand to other RTMA fields. (**v2.7**)
b. Produce/provide gridded O-A's.
c. Need the actual error variance which requires ensemble system. Could accomplish via leveraging a rapid-update, HREF-like system in the future.
5. **Updated documentation of the RTMA/URMA system**
a. **Ongoing** process as developers have time.
i. Begun work on technical memo.
ii. Working preliminary effort to add documentation on VLab.

* Attempting to improve background by use of time tendency and previous analysis. Hamill has proposed another potential solution, but it only works for temperature.